

B. In the Claims

Please cancel claims 1 to 32, 46 to 52, 55, and 59 to 62 without prejudice.

Following is the status the claims:

Claims 1-32 (canceled)

33. (original) An optical assembly, comprising a ball lens and a trifurcated fiber adapted for dual optical interrogation and in optical communication with said ball lens.

34. (original) The optical assembly of claim 33, wherein said trifurcated fiber comprises a first optically isolated emission bundle to collect light, second optically isolated emission bundle to collect light, and an excitation bundle.

35. (original) The optical assembly of claim 34, wherein said ball lens is separated from said trifurcated fiber by a transmission space.

36. (original) The optical assembly of claim 35, wherein said ball lens comprises a sapphire material.

37. (original) The optical assembly of claim 36, wherein said ball lens comprises an anti-reflective coating.

38. (original) The optical assembly of claim 33, wherein said trifurcated fiber comprises a first plurality of emission bundles for receiving light of a first wavelength and second plurality of emission bundles for receiving light of a second wavelength and said first plurality of emission bundles and said second plurality of emission bundles are randomly distributed in plurality of excitation bundles.

39. (original) The optical assembly of claim 33, wherein said trifurcated fiber comprises a first set of bundles for transmitting light of a first wavelength and second set of bundles for transmitting light of a second wavelength and third set of bundles for transmitting light of a third wavelength.

40. (original) The optical assembly of claim 39, wherein said trifurcated fiber is separated from said ball lens by a transmission space of about .1 mm to 1 mm.

41. (original) The optical assembly of claim 35, wherein said ball lens comprises either sapphire material or a silica material.

42. (original) The optical assembly of claim 39, wherein said first set of bundles and said second set of bundles are coaxially arranged with respect to said third set of bundles.

43. (original) An optical detection system, comprising:
- a) a light source that launches at least one predetermined wavelength of light,
 - b) sample holder,
 - c) a ball lens at a predetermined interrogation distance from said sample holder,
 - d) a trifurcated fiber adapted for dual optical interrogation and in optical communication with said ball lens, and
 - e) a detector that detects light of at least one desired wavelength and in optical communication with said ball lens.

44. (original) The optical detection system of claim 43, wherein said trifurcated fiber comprises a first plurality of emission bundles for receiving light of a first wavelength and second plurality of emission bundles for receiving light of a second wavelength and said first plurality of emission bundles and said light source launches at least one predetermined wavelength of excitation light at said sample holder.

45. (original) The optical detection system of claim 43, wherein said ball lens is at a predetermined transmission distance from said trifurcated fiber and further comprising at least one positioner to controllably change said predetermined transmission distance.

Claims 46-52 (canceled)

53. (original) The optical detection system of claim 43, wherein said ball lens is at a predetermined transmission distance from said trifurcated fiber that approximately corresponds to a focal length.

54. (original) The optical detection system of claim 43, wherein said trifurcated fiber comprises an end and said end is generally at a focal plane of said ball lens.

Claim 55 (canceled)

56. (original) An optical fiber assembly, comprising a trifurcated fiber comprising a first plurality of emission bundles for receiving light of a first wavelength and second plurality of emission bundles for receiving light of a second wavelength and said first plurality of emission bundles and said second plurality of emission bundles are non-randomly distributed in plurality of excitation bundles.

57. (original) The optical fiber assembly of claim 56, wherein said first set of bundles and said second set of bundles are coaxially arranged with respect to said third set of bundles.

58. (original) The optical fiber assembly of claim 56, wherein said first set of bundles is coaxially arranged with respect to said second set of bundles.

Claims 59-62 (canceled)